

Infection prevention and control

Guidance to action tools



RESPIRATORY
AND HAND
HYGIENE



PERSONAL
PROTECTIVE
EQUIPMENT



ENVIRONMENTAL
CLEANING,
WASTE AND LINEN
MANAGEMENT



World Health
Organization

REGIONAL OFFICE FOR Europe

Abstract

No country can claim to be free from health care associated infections, therefore, improvement of infection prevention and control (IPC) strategies is essential. WHO recommends the use of multimodal improvement strategies to implement IPC interventions. These include each item of standard and transmission-based precautions according to national guidelines or standard operating procedures and under the coordination of the national IPC focal point (or team, if existing). This publication consists of three focused improvement tools, called “aide-memoires”, which focus on 1) respiratory and hand hygiene, 2) personal protective equipment, and 3) environmental cleaning, waste and linen management, all elements of standard, droplet/contact and airborne precautions.

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**World Health
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REGIONAL OFFICE FOR **Europe**

Infection prevention and control

Guidance to action tools

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Acronyms and abbreviations

ABHR	alcohol-based handrub
AMR	antimicrobial resistance
COVID-19	coronavirus disease
HAI	health care associated infection
IPC	infection prevention and control
IPCAF	Infection Prevention and Control Assessment Framework
IPCAT2	Infection Prevention and Control Assessment Tool 2
MMIS	multimodal improvement strategies
PPE	personal protective equipment
SOP	standard operating procedure
WASH	water, sanitation and hygiene



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Background

The World Health Organization (WHO) recommends the use of multimodal improvement strategies (MMIS) to implement infection prevention and control (IPC) interventions. This includes each item of standard and transmission-based precautions according to national guidelines/standard operating procedures (SOPs) and under the coordination of the national IPC focal point (or team, if existing). The WHO core components of IPC programmes (1) and the WHO minimum requirements for IPC programmes (2) present the evidence for this.

The challenge

Implementation, i.e. moving from guidance to action, is already recognized as a key part of IPC programmes. A few WHO implementation manuals exist, particularly focused on IPC (3-7). However, even in well-resourced health-care facilities, IPC guideline recommendations are often not fully implemented or practices sustained. Providing practical improvement tools helps to improve practices and, in turn, results in better health outcomes.

The tools

The development of focused improvement tools, which are included in this document, was stimulated by the importance of and need for implementation of IPC guidance to support improvement of practices related to the management of acute respiratory infections, including coronavirus disease (COVID-19), influenza, etc. In part, it was a response to the COVID-19 pandemic, as identified by countries. However, it also continues the IPC capacity-building support that has been offered to countries in the European Region over the past few years.

In summary, three improvement tools are now presented in this document and are informed by: the WHO core components of IPC programmes, IPC guidance in the context of the COVID-19 pandemic, the WHO IPC approach to implementation and mainly, the WHO MMIS (see Annex 1), as well as the three consultation exercises (see Annex 2 for a brief overview of the development process). They bring a new, fresh dimension to the existing implementation resources and should often be used in conjunction with other tools. An outline of these is listed in each tool and at the end of this document. These new tools are specifically focused on 1) respiratory and hand hygiene, 2) personal protective equipment (PPE), and 3) environmental cleaning, waste and linen management, all elements of standard, droplet/contact and airborne precautions.

The tools will improve IPC in health care, both practices and behaviours, infrastructure and resources to ensure that those practices can happen reliably, support prevention of infections in health care, including acute respiratory infections, and support patient safety, quality care and ultimately patient outcomes, including those related to antimicrobial resistance (AMR).

What exactly are the tools?

- They are three focused improvement tools, called “aide-memoires”. Each is approximately five pages in length.
→ *They provide a bridge for ensuring that guidance statements are applied in practice.*
- They act as reminders of things to do in real, practical situations, e.g. IPC focal points can challenge themselves to think “have I done everything that was needed to ensure that IPC practices are reliably and safely carried out by the staff that needs to perform these?”
→ *The reminders span “how to organize” and “what to do” action checks, based on the complex and wide-ranging role of IPC focal points.*
- They provide a range of practical actions that are known to support guidance to action and therefore improve both practices and outcomes.
→ *Applied in combination, the actions will contribute to influencing the behaviour and practices of those who need to perform them.*
- They are similar to other short, practical tools, including WHO aide-memoires and evidence to action briefs.
→ *The aide-memoires are stand-alone tools that should be used individually in practice.*

Who should use them and who are they aimed at?

- They can be used by IPC focal points, primarily at facility level.
- While the actions are primarily aimed at IPC focal points, they will also be of interest to leaders¹ at different levels within the health-care setting.
- They will ultimately benefit those who are required to take IPC actions to prevent transmission of avoidable infections, and patients.
- Some of the content is specifically relevant to those working on budgets, procurement, communications, etc. as well as health leaders, although it is primarily aimed at what IPC focal points can do to achieve success. This frequently requires working with many other professionals, as outlined in detail in WHO IPC implementation manuals.

What do they include?

- In total, they each include five colour-coded sections representing the WHO MMIS; system change (“build it”), training and education (“teach it”), monitoring and feedback (“check it”), reminders and communications (“sell it”), safety culture (“live it”).
- Within each of the five sections, there are approximately eight action checks, rooted in a proven improvement approach.

¹ Leaders: anyone in administrative or management positions.

- There are two “prompt” headings – “be focused” and “be consistent” – which frame the five coloured sections. These aim to stimulate users to pursue all of the action checks but remind users that some of them are similar across aide-memoires (“be consistent”) and some are specifically focused on actions needed to address improvements to the topic (“be focused”).
- The action checks include direction for IPC focal points but also describe actions necessary by other professionals who will require important IPC input. Where this is the case, the term **IPC input** is used in the action checks, acknowledging that individual professional groups alone cannot necessarily achieve the action but together should influence it to happen appropriately.
- A short explanation of the WHO MMIS is also included. This is important for users to understand in order to make the best use of all the content within the aide-memoires.
- Associated web links are included, which link to other relevant WHO materials to help people get started if they are unclear about how to carry out the action checks.

In summary, the aide-memoires include statements that will further empower IPC focal points to take a range of actions that will sustain improvements in practices rooted in IPC guidance, using the MMIS. It will also help them meet the WHO core components of IPC programmes and other guidance recommendations.

When should they be used?

- At the facility level, the tools should be used when preparing to implement guidance, on a cyclical basis and at any time when aiming to improve adherence to guidance, with emphasis on factors that are known to help or hinder improvement.
 - *Even when guidance changes/is updated, the actions should be referred to in order to continue to support application of a valid, systematic approach to sustaining improvements in practice.*
- At the national level, the tools can be used to understand the support needed for improvement at the facility level.

The aide-memoires do not replace WHO guidance, manuals, training resources, assessment or other tools.

How should they be used?

These are the first tools in this guidance to action series and the first to focus on the detail of ‘how’ to improve certain IPC practices and behaviours by describing steps that comprise the five elements of the WHO MMIS.

- Users should first familiarize themselves with the content; the five coloured sections containing action checks. This should not take too long but is important in order to get organized.
 - *Each aide-memoire should be used as stand-alone tools in practice (provided separate from this full explanatory document);*
 - *The action checks would likely be used on a cyclical basis.*
- When preparing to implement WHO or national guidance or at any time when aiming to improve

adherence to IPC guideline recommendations, users should outline each of the action checks in discussions with other professionals on the improvements to be made.

- Users should then have a clear plan to apply the action checks to make improvements where needed, considering that even when things are in place, reliable, sustained improvement is challenging and things can still go wrong.
- The associated web links included in each tool can also be used, as they provide access to other related tools that help to take the actions outlined.
- The actions can be applied exactly as they are written, or adapted further to the local context while retaining the principles. They may also be deemed useful as part of training tools, as they explain what is required to ensure that IPC reliably happens in practice.

Short instructions are included in each aide-memoire as they are intended to be used as stand-alone tools in practice.

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3. World Health Organization and WHO Patient Safety. A guide to the implementation of the WHO multimodal hand hygiene improvement strategy. Geneva: World Health Organization; 2009 (WHO/IER/PSP/2009/02; <https://apps.who.int/iris/handle/10665/70030>, accessed 26 April 2021).
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Aide-memoire: respiratory and hand hygiene



Aide-memoire: respiratory and hand hygiene

Actions to ensure reliable improvements in infection prevention and control (IPC) practices.

Respiratory and hand hygiene are part of standard and transmission-based precautions (droplet, contact and airborne).

HOW SHOULD I USE THIS AIDE-MEMOIRE?

1. **Familiarize yourself with the content** of each of the five colour-coded sections.
2. **Consider each of the action checks to make a plan**, and outline them in discussions with others on the improvements to be made, **when preparing to implement WHO guidance, or at any time when aiming to improve adherence** to IPC guideline recommendations.
3. **Take action to make improvements** where needed, using the action checks (some web links are also provided to help if you do not know where to start). Note, this process will likely be cyclical/ongoing until all practices are reliably improved and sustained.

All action checks are for IPC focal points but also describe actions necessary by other professionals with important **IPC input** (where this is the case, the term **IPC input** is used acknowledging that individual groups of professionals alone cannot necessarily achieve the action but should combine to influence it to happen).

Monitor your overall progress – using the action checks will help you improve over time and will make you better prepared to meet the WHO core components of IPC programmes, when using the WHO infection prevention and control assessment framework.

The multiple actions presented, when used in combination, will contribute to influencing the behaviour of the target audience; those who should perform IPC practices. Focusing on only one aspect, such as a focus on delivering training only, will not achieve sustainable improvement in practices.



BE FOCUSED



THE SYSTEM CHANGE NEEDED TO PROCURE, DELIVER AND MANAGE INFRASTRUCTURE, EQUIPMENT, SUPPLIES AND OTHER RESOURCES (INCLUDING BUDGET) TO ENABLE IPC PRACTICES - "BUILD IT"



Read and use the statements below to ensure that a range of proven improvement actions have been taken.

Your action checks

- Systems to **reliably procure and distribute** tissues, medical masks, alcohol-based handrub (ABHR), soap and towels, as well as associated environmental cleaning and waste disposal products, have been put in place and included **IPC input** and the associated **dedicated budget**. Systems have also included product evaluations.
- Exercises to understand the **adequate numbers of products** that are required, as well as the distribution process, have been performed and have included **IPC input**.
- Steps to confirm **sustainable systems for reliable product/resource availability in patient care areas** have been put in place, even if previously thought to be a good system (e.g. a process that includes an alert mechanism for things that could still go wrong) with **IPC input**. **Roles and responsibilities** for having clean, stocked dispensers for masks and tissues, functioning hand hygiene facilities, waste disposal containers/bins have been outlined with **IPC input**. This includes replacement/replenishment.
- Systems that ensure **easy-to-access products**, which are reliably available, have been established and included **IPC input**, i.e. products positioned in places that are best placed for those who need to use them, and are **in line with IPC-informed policies** or standard operating procedures (SOPs), e.g. meetings have been held to discuss point of care locations for ABHR, depending on the setting.
- **Up-to-date policies** for respiratory and hand hygiene have been provided.
- **SOPs** for use in patient care areas have been provided, including safe use of masks and tissues, cough etiquette, hand hygiene, and cleaning and waste disposal actions. SOPs in paper or in electronic format have been made available, and are easily accessible to those who need them.
- **Budgets for targeted training, monitoring and reminders** (see other actions) have been pursued, identified and secured.
- Approaches to ensure **functioning environmental ventilation** (e.g. natural ventilation such as open windows) have **always included IPC input**.
- **Annual water service plans** in settings where water access/quality is an issue have been put in place with **IPC input**, to ensure infrastructure for action on hand hygiene (i.e. functioning sinks, etc.).
- **A local ABHR production plan** (WHO formulation/local company) has been put in place with **IPC input**, e.g. on volumes required, where these products are not reliably available from a credible company source.
- **Temporary strategies** on rational but safe use of masks where there are issues with supply, such as a temporary and time-limited SOP, have been considered and are clearly outlined **always with IPC input**.



A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>; accessed 26 April 2021).

Mask use in the context of COVID-19: interim guidance. Geneva: World Health Organization; 1 December 2020 (<https://apps.who.int/iris/handle/10665/337199>).

Technical specifications of personal protective equipment for COVID-19: interim guidance, 13 November 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/336622>, accessed 26 April 2021).

Rational use of personal protective equipment for COVID-19 and considerations during severe shortages: interim guidance, 23 December 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/338033>, accessed 26 April 2021).

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Water and Sanitation for Health Facility Improvement Tool (WASH FIT). Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254910>, accessed 26 April 2021).

Resource considerations for investing in hand hygiene improvement in health care facilities. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/341128>, accessed 5 May 2021).



A CULTURE OF SAFETY TO FACILITATE AN ORGANIZATIONAL CLIMATE THAT VALUES THE INTERVENTION – “LIVE IT”.



Read and use the statements below to ensure that a range of proven improvement actions have been taken.

Your action checks

- **The right leaders²/role models** have been identified and engaged with **IPC input**, with teams formed, where relevant (these may be from many different settings, including in health care or community leaders/families). Staff has been asked which role models they would best respond to (these can be very different in different settings and come from all levels).
- **Leaders/role models with the right expertise** for championing and influencing respiratory and hand hygiene have been engaged and identified, with **IPC input**, e.g. a “champion” badge to show that a culture of safety has been considered serious.
- **Leaders/senior managers have been encouraged to have done the following (not exhaustive):**
 - **understood and actively supported actions** in line with SOPs;
 - **role modelled the right practices** for respiratory and hand hygiene (and physical distancing) by performing these correctly in front of staff. Training sessions have also been attended alongside staff, particularly while (acute respiratory) infections are prevalent;
 - **encouraged “buddy” systems** to suit the local setting, to promote the right practices, as per SOPs, including having engaged supervisors specifically in how they can be ongoing role models;
 - **made visible the commitment** to budget allocation for respiratory and hand hygiene resources;
 - **shown commitment** to protected time for targeted, real-time training. Training plans have been signed off for all levels of staff;
 - **provided written or auditory messages** (with plans made to update regularly, i.e. monthly), with **IPC input**;
 - **held discussions** (at both facility and national levels as appropriate), e.g. virtual or on-site meetings/focus groups with all the right people and an agenda to allow for problems to be discussed, questions to be heard and solutions to improvements outlined, with **IPC input**. Suitable, regular times for “safety talks” have been set, using a range of ways that make sure the right people are available. Discussions have been facilitated in a way that allows everyone to have a chance to talk;
 - **promoted and supported motivational activities** with **IPC input**, e.g. in the form of an award that is announced publicly to encourage staff to continue to adhere to respiratory and hand hygiene practices as per SOPs.

A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).

Taking Action: Steps 4 & 5 In Twinning Partnerships for Improvement. In: World Health Organization, service delivery and safety [website] (<http://apps.who.int/iris/bitstream/handle/10665/273159/WHO-HIS-SDS-2018.14-eng.pdf?ua=1>, accessed 26 April 2021).

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² Leaders: anyone in administrative or management positions.



REMINDERS AND COMMUNICATIONS TO PROMOTE THE DESIRED ACTIONS, AT THE RIGHT TIME – “SELL IT”



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- ❑ **Accurate reminders** (based on WHO recommendations) have been sourced/developed/adapted if not by IPC then with **IPC input** and used to champion respiratory and hand hygiene, mask use, and associated environmental cleanliness and waste management (these may also include segregation/distancing measures). Directions on when and how to use products/equipment have been included, and cleaning/disposal, as relevant, as well as motivational slogans (posters, short videos and electronic reminders, where possible, are some examples).
- ❑ **Decisions** have included staff, on the types of reminders that will engage them, as well as on the content, where applicable, **always with IPC input**. The target audience for reminders has been considered, e.g. whether these should be written or illustrative.
- ❑ The most **appropriate placement** of reminders has been arranged **between IPC and staff**, and has **focused on the point of care** wherever persons with (acute respiratory) infections are (both inpatient and outpatient settings).
- ❑ Any **issues with placement** of reminders have been addressed with **IPC input**, including allocated notice board approvals, wall placement (to avoid damage), any “competition” with other reminders.
- ❑ **Regular replenishment** of reminders (posters)/other communications have been planned with **IPC input**, including auditory messages from leaders, e.g. on a monthly basis. Slight variations in how the reminders are presented have been planned, in order to keep people’s attention.
- ❑ **Scripts/prompts** for local champions/role models have been provided, to use when talking about prevention measures for (acute respiratory) infection.
- ❑ **A range of messages** have been developed and issued to drive action and ensure ongoing motivation; this might be compliance feedback or facts about the prevalent (acute respiratory) infections, and have been arranged **between IPC and leaders**.

A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).

Cough etiquette poster. In: World Health Organization [website] (https://www.who.int/images/default-source/health-topics/coronavirus/risk-communications/general-public/protect-yourself/blue-3.png?sfvrsn=b1ef6d45_2, accessed 26 April 2021).



BE CONSISTENT


TRAINING AND EDUCATION TO IMPROVE HEALTH WORKER KNOWLEDGE – “TEACH IT”.


Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- ❑ **Responsibility** for checking that current training and education programmes have included the correct, up-to-date respiratory and hand hygiene actions (and associated environmental cleaning and waste management) has been allocated. To address any staffing/responsibility changes, a mechanism for reassigning responsibility has also been put in place.
- ❑ **A plan** for all training resources to be updated where and when necessary, mapping guideline/policy/SOP recommendations to training content, has been put in place.
- ❑ **Mechanisms**, such as a reliable annual and/or “new guidance issued” alert have been put in place to ensure timely updates to training resources, including allocated responsibilities.
- ❑ Training **needs assessments** have been conducted across different disciplines/levels, and any other assessments (from monitoring activities) have also been used to inform training.
- ❑ **The required expertise** to conduct targeted training and answer questions (this may mean asking external experts) has been identified and confirmed.
- ❑ **A schedule** has been prepared and **targeted training** of staff and identified others has been delivered, including refresher courses.
- ❑ **Different (practical) approaches**, as necessary, have been used, including demonstrations in person or through online tools (the type of training should be relatable to the target audience). Staff has ultimately been empowered through training, which will lead to autonomy, encouraging them to consistently do the right thing and to serve as role models to others.
- ❑ **Easily accessible training schedules** with deadlines for completion and targets have been made available for all staff to view. Different methods have been applied to motivate training attendance/completion, e.g. certificates of completion, recognition/rewards, statements from leaders who have already completed the training.
- ❑ Depending on the setting, **additional educational materials** for patients and visitors have been prepared always with **IPC input**, and, for example, train-the-trainer sessions have been offered to support these communities.
- ❑ **Direction/training materials** on producing ABHR (pharmacy staff) and local production of masks, if relevant, have been supported with **IPC input**.

A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).

Cough etiquette poster. In: World Health Organization [website] (https://www.who.int/images/default-source/health-topics/coronavirus/risk-communications/general-public/protect-yourself/blue-3.png?sfvrsn=b1ef6d45_2, accessed 26 April 2021).

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MONITORING AND FEEDBACK TO ASSESS THE PROBLEM, DRIVE APPROPRIATE CHANGE AND DOCUMENT IMPROVEMENT OF PRACTICES – “CHECK IT”.



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- ❑ **Dedicated, trained staff** has been identified to execute monitoring activities.
- ❑ **Monitoring tools** have been checked for validity and reliability in line with guidance/SOPs and data collection recommendations, if not already done, and have been made available for use.
- ❑ An audit/surveillance **monitoring schedule** has been created to include roles and responsibilities, and made available to ensure that staff engage with this as an improvement approach (different from formal monitoring that is seen as “inspection”).
- ❑ The audit/surveillance **reporting and feedback schedule** has been executed.
- ❑ Monitoring activities have embraced **alert mechanisms**, not just routine planned activities, to highlight in real time when systems and processes fail and when, for example, products are not reliably available or not functioning.
- ❑ **Additional mechanisms** for patient/visitor feedback have been considered, depending on the setting, with **IPC input**.
- ❑ **Audit and surveillance activities, with reporting and feedback, have included at least the following:**
 - **reliable, sufficient availability of quality products/equipment** for respiratory and hand hygiene, and associated environmental cleaning and waste management, considering end-to-end distribution (tissues, masks, water, soap, towels, ABHR, the right cleaning and waste products, all functioning and correctly placed). The impact of any changes to procurement plans has also been addressed, e.g. a new ABHR and the need for staff acceptability and tolerability surveys, as well as review of the impact upon the built environment, i.e. from new holders to be placed on walls, etc.;
 - respiratory and hand hygiene **practices**, including timing and techniques;
 - **consumption/utilization** rate and replenishment of products;
 - staff **knowledge and perceptions** on respiratory and hand hygiene, mask use, and associated environmental cleaning and waste management;
 - **availability, positioning and legibility of reminders** (e.g. posters, leaflets, auditory messages), as well as their ability to engage the audience, and frequency of replacement;
 - training **attendance records and evaluations**, including information on informed and empowered staff;
 - **infection rates**, aimed at stimulating improved practices.

A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).



Aide-memoire: personal protective equipment



Aide-memoire: personal protective equipment

Actions to ensure reliable improvements in infection prevention and control (IPC) practices.

Personal Protective Equipment (PPE), i.e. mask, eye protection, gowns, gloves, is part of standard and transmission-based precautions (droplet/contact/airborne). Although the use of PPE is the most visible control used to prevent the spread of acute respiratory infection, it is only one of the IPC measures and should not be relied upon as a primary prevention strategy. In the absence of hand hygiene, effective administrative and engineering controls, PPE has limited benefit.

HOW SHOULD I USE THIS AIDE-MEMOIRE?

1. **Familiarize yourself with the content** of each of the five colour-coded sections.
2. **Consider each of the action checks to make a plan**, and outline them in discussions with others on the improvements to be made, **when preparing to implement WHO guidance, or at any time when aiming to improve adherence** to IPC guideline recommendations.
3. **Take action to make improvements** where needed, using the action checks (some web links are also provided to help if you do not know where to start). Note that this process will likely be cyclical/ongoing until all practices are reliably improved and sustained.

All action checks are for IPC focal points but also describe actions necessary by other professionals with important **IPC input** (where this is the case, the term **IPC input** is used acknowledging that individual groups of professionals alone cannot necessarily achieve the action but should combine to influence it to happen).

Monitor your overall progress – using the action checks will help you improve over time and will make you better prepared to meet the WHO core components of IPC programmes, when using the WHO infection prevention and control assessment framework.

The multiple actions presented, when **used in combination**, will contribute to influencing the behaviour of the target audience; i.e. those who should perform IPC practices. Focusing on only one aspect, such as a focus on delivering training only, will not achieve sustainable improvement in practices.



BE FOCUSED



THE SYSTEM CHANGE NEEDED TO PROCURE, DELIVER AND MANAGE INFRASTRUCTURE, EQUIPMENT, SUPPLIES AND OTHER RESOURCES (INCLUDING BUDGET) TO ENABLE IPC PRACTICES – “BUILD IT”



Read and use the statements below to ensure that a range of proven improvement actions have been taken.

Your action checks

- ❑ Systems to **reliably procure and distribute** PPE (and associated hand hygiene and waste management products) have been put in place and included **IPC input**, and the associated, **dedicated budget**. Systems have also included product evaluations.
- ❑ Exercises to understand the **adequate numbers of PPE products** that are required, as well as the distribution process, have been performed and included **IPC input**. The correct standard/quality and sizes of PPE have also been included in the exercises.
- ❑ Steps to confirm **sustainable systems for reliable product/resource availability in patient care areas** have been put in place, even if previously thought to be a good system (e.g. a process that includes an alert mechanism for things that could still go wrong), with **IPC input**. **Roles and responsibilities** for stocked supplies of PPE (and associated hand hygiene, waste and linen management products) have been outlined with **IPC input**. This includes replacement/replenishment.
- ❑ Systems that ensure **easy-to-access PPE products** that are reliably available have been established and included **IPC input**, i.e. products positioned in places that are most suited to those who need to use them, and are **in line with IPC-informed policies** or standard operating procedures (SOPs), e.g. meetings have been held to discuss point of care locations for PPE dispensers, depending on the setting.
- ❑ **Up-to-date policies** for PPE, including as per IPC guidance on (acute respiratory) infection, have been provided.
- ❑ **SOPs** for use in patient care areas have been provided, including safe and appropriate use of PPE, and associated hand hygiene, and waste disposal actions. Replacement of PPE supplies has also been included. SOPs in paper or in electronic format have been made available so that they are easily accessible to those who need them.
- ❑ **Budgets for targeted training, monitoring and reminders** (see other actions) have been pursued, identified and secured.
- ❑ **Temporary strategies on rational but safe use** of PPE where there are issues with supply, such as a temporary and time-limited SOP, have been considered and clearly outlined, **always with IPC input** (including minimizing the need for PPE use, organizing work flow to avoid unnecessary use, appropriate extended use, reprocessing where there is an efficient linen/reprocessing service and alternative PPE items).
- ❑ **Temporary systems** to ensure on-site safe PPE waste disposal due to increased use (i.e. functional collection containers) have been put in place with **IPC input**.
- ❑ **Temporary strategies** have been put in place **always with IPC input**, for a local authority to assess any proposed local production of PPE according to specific minimum standards and technical specifications.
- ❑ **Annual water service plans** have been put in place with **IPC input** in settings where water access/quality is an issue to ensure that there is infrastructure to act upon PPE reprocessing, where this is necessary.



A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).

Mask use in the context of COVID-19: interim guidance, 1 December 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/337199>, accessed 26 April 2021).

Technical specifications of personal protective equipment for COVID-19: interim guidance, 13 November 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/336622>, accessed 26 April 2021).

Rational use of personal protective equipment for COVID-19 and considerations during severe shortages: interim guidance, 23 December 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/338033>, accessed 26 April 2021).

World Health Organization and United Nations Children's Fund (UNICEF). Water, sanitation, hygiene, and waste management for SARS-CoV-2, the virus that causes COVID-19: interim guidance, 29 July 2020. Geneva: World Health Organization (<https://apps.who.int/iris/handle/10665/333560>, accessed 26 April 2021).

Disease Commodity Packages. In: World Health Organization: Emergencies: Disease Commodity Packages [website] (<https://www.who.int/emergencies/what-we-do/prevention-readiness/disease-commodity-packages/en/>, accessed 26 April 2021)

WHO COVID-19 essential supplies forecasting tool (COVID-ESFT), version 4. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/340747>, accessed 26 April 2021).

Resource considerations for investing in hand hygiene improvement in health care facilities. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/341128>, accessed May 5 2021).





Read and use the statements below to ensure that a range of proven improvement actions have been taken.

Your action checks

- **The right leaders³/role models/observers** have been identified and engaged with **IPC input**, and teams formed where relevant (these may be from many different settings, including in health care or community leaders/families). Staff have been asked which PPE role models they would best respond to (these can be very different in different settings and come from all levels).
- **Role models/leaders with the right expertise** for championing, influencing and being real-time observers for appropriate PPE use have been engaged, with **IPC input**, e.g. a “champion” badge to show that a culture of safety has been considered serious.
- **Leaders/senior managers have been encouraged to have done the following (not exhaustive):**
 - **understood and actively supported actions** in line with PPE policies and SOPs;
 - **role modelled the right practices** for PPE use (not forgetting associated hand hygiene actions and waste management) by performing these actions correctly in front of staff. Training sessions have also been attended alongside staff, particularly while (acute respiratory) infections are prevalent;
 - **encouraged “buddy” systems** to suit the local setting to promote the right practices, as per SOPs, including having engaged managers/supervisors specifically in how they can be ongoing role models;
 - **made visible the commitment** to budget allocation for PPE and associated resources;
 - **shown commitment** to protected time for targeted, real-time training. Training plans have been signed off for all levels of staff;
 - **provided written or auditory messages with IPC input** (with plans made to update regularly, i.e. monthly);
 - **held discussions** (at both facility and national level as appropriate), e.g. virtual or on-site meetings/ focus groups with all the right people and an agenda to allow for problems with PPE to be discussed, questions to be heard and solutions to improvements outlined, with **IPC input**. Suitable, regular times for “safety talks”, in person or virtually, have been set, using a range of ways that make sure that the right people are available (including use of the social media). Discussions have been facilitated in a way that allows everyone to have a chance to talk;
 - **promoted and supported staff motivational activities with IPC input**, e.g. in the form of an award that is announced publicly to encourage staff to continue to adhere to appropriate PPE use, as per SOPs.

A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).

PPE poster. How to guide: putting on and taking off PPE for contact/droplet precautions – infographic [website] In: World Health Organization (https://www.who.int/docs/default-source/infection-prevention-and-control/ppe-en.pdf?sfvrsn=4b45270e_2, accessed 26 April 2021).

Contact and droplet precautions – COVID-19. Personal protective equipment (PPE) – infographic [website] (<https://www.who.int/csr/resources/publications/Contact-Droplet-COVID-19-Precautions.pdf?ua=1>, accessed 26 April 2021).

Taking Action: Steps 4 & 5 In Twinning Partnerships for Improvement. In: World Health Organization, service delivery and safety [website] (<http://apps.who.int/iris/bitstream/handle/10665/273159/WHO-HIS-SDS-2018.14-eng.pdf?ua=1>, accessed 26 April 2021).

The Comprehensive Unit-based Safety Program (CUSP) method. In: Agency for Healthcare Research and Quality, healthcare-associated infection program [website] (<https://www.ahrq.gov/hai/cusp/index.html>, accessed 26 April 2021).

³ Leaders: anyone in administrative or management positions.



REMINDERS AND COMMUNICATIONS TO PROMOTE THE DESIRED ACTIONS, AT THE RIGHT TIME – “SELL IT”



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- ❑ **Accurate reminders** (based on WHO recommendations) have been sourced/developed/adapted if not by IPC then with **IPC input** and used to champion PPE use and associated hand hygiene and waste management actions. Directions on when and how to use products/equipment have been included and disposal as relevant, as well as motivational slogans (posters, short videos and electronic reminders where possible are some examples).
- ❑ **Decisions** have included staff, on the types of reminders that will engage them, **always with IPC input**. For PPE use, illustrative reminders are usually preferred.
- ❑ The most **appropriate placement** of reminders has been arranged **between IPC and staff**, and has **focused on the point of care** wherever persons with (acute respiratory) infections are (both inpatient and outpatient settings).
- ❑ Any **issues with placement** of reminders have been addressed with **IPC input**, including allocated wall placement (to avoid damage) and any “competition” with other reminders.
- ❑ **Regular replenishment** of reminders (posters)/other communications have been planned with **IPC input**, including auditory messages from leaders, e.g. on a monthly basis. Slight variations in how the reminders are presented have been planned, in order to maintain people’s attention.
- ❑ **Scripts/prompts** for local champions/role models have been provided when talking about PPE use, considering the local context and culture.
- ❑ **A range of staff messages** have been developed and issued to drive action and ensure ongoing motivation; this might be compliance feedback or facts about the prevalent (acute respiratory) infections, and have been arranged **between IPC and leaders**.

A sample of WHO resources that can help you if you do not know how to start

PPE poster. How to guide: putting on and taking off PPE for contact/droplet precautions – infographic [website] In: World Health Organization (https://www.who.int/docs/default-source/infection-prevention-and-control/ppe-en.pdf?sfvrsn=4b45270e_2, accessed 26 April 2021).

Contact and droplet precautions – COVID-19. Personal protective equipment (PPE) – infographic [website] (<https://www.who.int/csr/resources/publications/Contact-Droplet-COVID-19-Precautions.pdf?ua=1>, accessed 26 April 2021).

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).





TRAINING AND EDUCATION TO IMPROVE HEALTH WORKER KNOWLEDGE – “TEACH IT”.



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- ❑ **Responsibility** for checking current training and education programmes has been allocated and have included the correct, up-to-date PPE use (for standard, droplet/contact and airborne PPE recommendations) and associated hand hygiene and waste management actions, at the right times. To address any staffing/responsibility changes, a mechanism for reassigning responsibility has also been put in place.
- ❑ **A plan** for all training resources to be updated where and when necessary, mapping guideline/policy/SOP recommendations to training content, has been put in place.
- ❑ **Mechanisms**, such as a reliable annual and/or “new guidance issued” alert, have have been put in place to ensure timely updates to training resources, including allocated responsibilities.
- ❑ Training **needs assessments** have been conducted across different disciplines/levels, namely, anyone who would have the need to use PPE and may be in contact with body fluids, and any other assessments (from monitoring activities) have also been used to inform training.
- ❑ **The required expertise** to conduct targeted training and answer questions (this may mean asking external experts) has been identified and confirmed.
- ❑ **A schedule** has been prepared and **targeted training** of staff and identified others has been delivered, including refresher courses.
- ❑ **Different (practical) approaches**, including demonstrations and peer review checks, in person or through online tools, have been included (the type of training should be relatable to the target audience). Staff has ultimately been empowered through training, which will lead to autonomy, encouraging them to consistently do the right thing and to serve as role models to others.
- ❑ **Easily accessible training schedules** with deadlines for completion and targets have been made available for all staff to view. Different methods have been applied to motivate training attendance/completion, e.g. certificates of completion, recognition/rewards, statements from leaders who have already completed the training.
- ❑ Depending on the setting, **additional educational materials** for patients and visitors have been prepared **always with IPC input** and, for example, train-the-trainer sessions have been offered to support these communities.
- ❑ **A schedule** has been prepared and delivered to provide **targeted training on the temporary use of alternative items** in the absence of recommended PPE, e.g. masks, and on reprocessing requirements and extended use of PPE.
- ❑ **Direction/training materials** on the local production of PPE where this is temporarily necessary have been provided, **always with IPC input**.



A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).

Infection Prevention and Control Course Series. In: World Health Organization, Infection Prevention and control [website] (<https://openwho.org/channels/ipc>, accessed 26 April 2021).

PPE poster. How to guide: putting on and taking off PPE for contact/droplet precautions – infographic [website] In: World Health Organization (https://www.who.int/docs/default-source/infection-prevention-and-control/ppe-en.pdf?sfvrsn=4b45270e_2, accessed 26 April 2021).

Contact and droplet precautions – COVID-19. Personal protective equipment (PPE) – infographic [website] (<https://www.who.int/csr/resources/publications/Contact-Droplet-COVID-19-Precautions.pdf?ua=1>, accessed 26 April 2021).

Hennessy-Hicks Training Needs Analysis Questionnaire and Manual. Training Assessment Tool. Geneva: World Health Organization; 2011 (https://www.who.int/workforcealliance/knowledge/resources/hennessyhicks_trainingneedsquest/en/, accessed 26 April 2021).



MONITORING AND FEEDBACK TO ASSESS THE PROBLEM, DRIVE APPROPRIATE CHANGE AND DOCUMENT IMPROVEMENT OF PRACTICES – “CHECK IT”.



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- ❑ **Dedicated, trained staff** have been identified to execute monitoring activities.
- ❑ **Monitoring/observation tools** have been checked for validity and reliability in line with guidance/SOPs and data collection recommendations, and have been made available for use.
- ❑ An audit/surveillance **monitoring schedule** has been created to include roles and responsibilities, and made available to ensure that staff engage with this as an improvement/feedback approach.
- ❑ The audit/surveillance **reporting and feedback schedule** has been executed and targeted in a way that engages staff.
- ❑ Monitoring activities have embraced **alert mechanisms**, not just routine planned activities, to highlight in real time when systems and processes fail and, for example, when products are not reliably available or not fit for purpose.
- ❑ **Additional mechanisms** for patient/visitor feedback have been considered, depending on the setting, with **IPC input**.
- ❑ **Audit and surveillance activities, with reporting and feedback, have included at least the following:**
 - **reliable, sufficient availability of PPE (masks/respirators, aprons/gowns, gloves)**, along with hand hygiene products and other necessary equipment (for waste disposal or reprocessing) – the right-sized products functioning and correctly placed, considering end-to-end distribution. The impact of any changes to procurement plans has also been monitored, e.g. a new type of gown and the need for staff acceptability and tolerability surveys, as well as a review of the waste/reprocessing implications;
 - **PPE use/practices**, including timing and donning and doffing techniques and associated hand hygiene and waste management action, as described for standard, droplet/contact, airborne precautions, (consider reporting percentage of staff);
 - **PPE consumption/utilization** rate and replenishment of products, specific to individual settings, where possible, as well as PPE requests in specific settings (to assess rational and safe use, e.g. inappropriate double gloving);
 - staff **knowledge and perceptions** on appropriate and safe use of PPE and associated hand hygiene and waste management;
 - **availability, positioning and legibility of reminders** (e.g. posters, leaflets, auditory messages), as well as their ability to engage and frequency of replacement;
 - training **attendance records and evaluations**, including information on informed and empowered staff;
 - **infection rates**, aimed at stimulating improved practices.

A sample of WHO resources that can help you if you do not know how to start

The evidence for clean hands. In: World Health Organization: hand hygiene [website] (<https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene>, accessed 26 April 2021).



Aide-memoire: environmental cleaning, waste and linen management



Aide-memoire: environmental cleaning, waste and linen management

Actions to ensure reliable improvements in infection prevention and control (IPC) practices.

Environmental cleaning, waste and linen management are all part of standard and transmission-based (droplet/contact/airborne) precautions.

HOW SHOULD I USE THIS AIDE-MEMOIRE?

1. **Familiarize yourself with the content** of each of the five colour-coded sections.
2. **Consider each of the action checks to make a plan**, and outline them in discussions with others on the improvements to be made, **when preparing to implement WHO guidance, or at any time when aiming to improve adherence** to IPC guideline recommendations.
3. **Take action to make improvements** where needed, using the action checks (some web links are also provided to help if you do not know where to start). Note that this process will likely be cyclical/ongoing until all practices are reliably improved and sustained.

All action checks are for IPC focal points but also describe actions necessary by other professionals with important **IPC input** (where this is the case, the term **IPC input** is used acknowledging that individual groups of professionals alone cannot necessarily achieve the action but should combine to influence it to happen).

Monitor your overall progress – using the action checks will help you improve over time and will make you better prepared to meet the WHO core components of IPC programmes, when using the WHO infection prevention and control assessment framework.

The multiple actions presented, when **used in combination**, will contribute to influencing the behaviour of the target audience; i.e. those who should perform IPC practices. Focusing on only one aspect, such as a focus on delivering training only, will not achieve sustainable improvement in practices.



BE FOCUSED



THE SYSTEM CHANGE NEEDED TO PROCURE, DELIVER AND MANAGE INFRASTRUCTURE, EQUIPMENT, SUPPLIES AND OTHER RESOURCES (INCLUDING BUDGET) TO ENABLE IPC PRACTICES – “BUILD IT”



Read and use the statements below to ensure that a range of proven improvement actions have been taken.

Your action checks

- Systems to **reliably procure and distribute** quality products have been put in place with **IPC input** (equipment for cleaning/disinfection and handling, collecting, segregating, transporting and final disposal and/or reprocessing of waste and linen, respectively, as well as the required PPE and hand hygiene products), and the associated **dedicated budget**. Systems have also included product evaluations.
- Processes to understand the **adequate numbers of staff and their time** required for environmental cleaning, waste/linen management have been performed with **IPC input**.
- Exercises to understand the **adequate numbers of products/equipment** that are required, as well as the distribution process, have been performed, with **IPC input**.
- Steps to confirm **sustainable systems for reliable product/equipment availability in patient care areas** have been put in place, even if previously thought to be a good system (e.g. include an alert mechanism to things that could still go wrong such as broken equipment when a task is about to be performed) with **IPC input**. **Roles and responsibilities** for clean, stocked dispensers of equipment, including cloths, mop heads, waste/linen disposal containers/bins, as well as for preparation of cleaning/disinfectant solutions, if required, have been outlined with **IPC input as necessary**. This includes replacement/replenishment as well as associated PPE and hand hygiene products.
- Systems that ensure the **correct location of equipment/products** to be reliably available have been established and included **IPC input as necessary**, and are **in line with IPC-informed policies** or standard operating procedures (SOPs), e.g. meetings have been held to discuss point of care locations for cleaning equipment storage.
- **Up-to-date policies** for environmental cleaning and waste/linen management have been provided by or with **IPC input**.
- **SOPs** for activities to be performed in or for patient care areas have been provided by or with **IPC input**. SOPs in paper or in electronic format have been made available, in order to be easily accessible and understandable to those who need them.
- **Budgets for targeted training, monitoring and reminders** (see other actions) have been pursued, identified and secured with **IPC support as necessary**.
- **Annual water service plans** in settings where water access/quality is an issue have been put in place with **IPC input**, to ensure infrastructure for environmental cleaning, waste and linen management.
- **Temporary enhanced and time-limited strategies/SOPs for cleaning/disinfection, waste and linen product availability and processes** (including locally produced sharps waste containers, dedicated flush toilets or latrines and reuse of cloths for cleaning) have been put in place where infrastructure and resources may be an issue, **always with IPC input**. Dedicated toilet facilities for those with suspected/known infection have been appropriately coordinated and managed with **IPC input**.



A sample of WHO resources that can help you if you do not know how to start

CDC and ICAN. Best Practices for Environmental Cleaning in Healthcare Facilities in Resource-Limited Settings. Version 2. Atlanta, GA: US Department of Health and Human Services, CDC; Cape Town, South Africa: Infection Control Africa Network; 2019 (<https://www.cdc.gov/hai/prevent/resource-limited/index.html>, accessed 26 April 2021).

Chartier Y, Emmanuel J, Pieper U, Prüss A, Rushbrook P, Stringer R, Townend W, Wilburn S and Zghondi R, editors. Safe management of wastes from health-care activities. 2nd edition. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/85349>, accessed 26 April 2021).

Overview of technologies for the treatment of infectious and sharp waste from health care facilities. Geneva: World Health Organization; 2019. (<https://apps.who.int/iris/handle/10665/328146>, accessed 26 April 2021).

Cleaning and disinfection of environmental surfaces in the context of COVID-19: interim guidance, 15 May 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/332096>, accessed 26 April 2021).

World Health Organization and United Nations Children's Fund (UNICEF). Water, sanitation, hygiene, and waste management for SARS-CoV-2, the virus that causes COVID-19: interim guidance, 29 July 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333560>, accessed 26 April 2021).

Rational use of personal protective equipment for COVID-19 and considerations during severe shortages: interim guidance, 23 December 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/338033>, accessed 26 April 2021).

Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, Acinetobacter baumannii and Pseudomonas aeruginosa in health care facilities. Geneva: World Health; 2017 (<https://apps.who.int/iris/handle/10665/259462>, accessed 26 April 2021).

WHO COVID-19 essential supplies forecasting tool (COVID-ESFT), version 4. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/340747>, accessed 26 April 2021).

Resource considerations for investing in hand hygiene improvement in health care facilities. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/341128>, accessed 5 May 2021).



A CULTURE OF SAFETY TO FACILITATE AN ORGANIZATIONAL CLIMATE THAT VALUES THE INTERVENTION – “LIVE IT”.



Read and use the statements below to ensure that a range of proven improvement actions have been taken.

Your action checks

- **The right leaders⁴/role models** who will influence those who clean and manage waste/linen have been identified and engaged with **IPC input as necessary**, with teams formed, where relevant.
- **Leaders/role models with the right expertise** for championing cleaning and waste/linen management have been engaged with **IPC input, as necessary**, and are identifiable, e.g. a “champion” badge, to show that a culture of safety has been considered serious.
- **Leaders/senior managers have been encouraged to have done the following (not exhaustive):**
 - **understood and actively supported actions** in line with SOPs;
 - **role-modelled the right practices**, e.g. by correctly disposing of waste if spending time with staff in clinical areas. Training sessions have also been attended alongside staff, particularly while (acute respiratory) infections are prevalent;
 - **encouraged “buddy” systems** to suit the local setting, to promote the right practices, as per SOPs, including having engaged supervisors specifically in how they can be ongoing role models;
 - **made visible the commitment** to budget allocation for IPC standards of cleaning, waste and linen management, including for the right products/equipment;
 - **shown commitment** to protected time for targeted, real-time training. Training plans have been signed off for all levels of staff, including those who dispose of/reprocess waste and linen and those who manage waste/linen and undertake environmental cleaning in practice;
 - **provided written or auditory messages** (with plans made to update regularly, i.e. monthly), with **IPC input**;
 - **held discussions** (at both facility and national level as appropriate), e.g. virtual or on-site meetings/ focus groups, with all the right people and an agenda to allow for problems to be discussed, questions to be heard and solutions to improvements outlined, with **IPC input**. Discussions have been facilitated in a way that allows everyone to have a chance to talk. This may need to include members of the community;
 - **promoted and supported motivational activities** with **IPC input as necessary**, e.g. in the form of an award that is announced publicly to encourage staff to continue to adhere to cleaning, waste/ linen SOPs.

A sample of WHO resources that can help you if you do not know how to start

Taking Action: Steps 4 & 5 In Twinning Partnerships for Improvement. In: World Health Organization, service delivery and safety [website] (<http://apps.who.int/iris/bitstream/handle/10665/273159/WHO-HIS-SDS-2018.14-eng.pdf?ua=1>, accessed 26 April 2021).

The Comprehensive Unit-based Safety Program (CUSP) method. In: Agency for Healthcare Research and Quality, healthcare-associated infection program [website] (<https://www.ahrq.gov/hai/cusp/index.html>, accessed 26 April 2021).

⁴ Leaders: anyone in administrative or management positions.



REMINDERS AND COMMUNICATIONS TO PROMOTE THE DESIRED ACTIONS, AT THE RIGHT TIME – “SELL IT”



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- **Accurate reminders** (based on WHO recommendations) have been sourced/developed/adapted if not by IPC then with **IPC input** and used to champion environmental cleanliness and waste/linen management. Directions on when and how to use products/equipment have been included, as well as cleaning/reprocessing/disposal, along with motivational slogans (posters, short videos and electronic reminders, where possible, are some examples).
- **Decisions** have included staff on the types of reminders that will engage them, as well as on the content, where applicable, **always with IPC input**. The target audience for reminders has been considered, e.g. written versus illustrative.
- Those supervising/supporting cleaning, waste/linen practices (whether IPC focal points or others) have been encouraged to ensure that:
 - the most **appropriate placement** of reminders has been arranged;
 - any **issues with placement** of reminders have been addressed with **IPC input**, including allocated notice board approvals, wall placement (to avoid damage), any “competition” with other reminders;
 - **regular replenishment** of reminders (posters)/other communications have been planned with **IPC input, as necessary**. Slight variations in how the reminders are presented have been planned, in order to hold peoples’ attention.
- **Scripts/prompts** for local champions/role models have been provided, to use when talking about prevention measures for acute respiratory and other infections, and the importance of cleaning and waste/linen management, **always with IPC input**.
- **A range of messages** have been developed and issued to drive action and ensure ongoing motivation; this might be compliance feedback or facts about the prevalent (acute respiratory) infections, and have been arranged **between IPC and leaders**.

A sample of WHO resources that can help you if you do not know how to start

PPE poster. How to guide: putting on and taking off PPE for contact/droplet precautions – infographic [website] In: World Health Organization (https://www.who.int/docs/default-source/infection-prevention-and-control/ppe-en.pdf?sfvrsn=4b45270e_2, accessed 26 April 2021).

Contact and droplet precautions – COVID-19. Personal protective equipment (PPE) – infographic [website] (<https://www.who.int/csr/resources/publications/Contact-Droplet-COVID-19-Precautions.pdf?ua=1>, accessed 26 April 2021).





TRAINING AND EDUCATION TO IMPROVE HEALTH WORKER KNOWLEDGE – “TEACH IT”.



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- **Responsibility** has been allocated, **always with IPC input**, for checking that current training and education programmes have included the correct, up-to-date cleaning/disinfection, waste and linen management (and associated PPE use and hand hygiene actions). To address any staffing/responsibility changes, a mechanism for reassigning responsibility has also been put in place.
- **A plan** for all training resources to be updated where and when necessary, mapping guideline/policy/SOP recommendations to training content, has been put in place with **IPC input**.
- **Mechanisms**, such as a reliable annual and/or “new guidance issued” alert, have been put in place to ensure timely updates to training resources, including allocated responsibilities and with **IPC input**.
- Training **needs assessments** have been conducted across different disciplines/levels with **IPC input**, and any other assessments (from monitoring activities) have also been used to inform training.
- **The required expertise** to conduct targeted training and to answer questions (this may mean asking external experts) has been identified and confirmed, with **IPC input**.
- **A schedule** has been prepared and **targeted training** of staff has been delivered, including refresher courses, with **IPC input**.
- **Those conducting the training (whether IPC focal point or others) have been encouraged to do the following:**
 - **included how to prepare cleaning solutions where necessary**, how to put on and remove PPE, how to perform hand hygiene, and how to clean an object/area;
 - **made available easily accessible training schedules** with deadlines for completion, for all staff to view;
 - **applied different methods to motivate** training attendance/completion, e.g. certificates of completion, recognition/rewards, statements from leaders who have already completed the training.
- Depending on the setting, **additional educational materials** for patients and visitors have been prepared with **IPC input** and train-the-trainer sessions have been offered to support these communities.

A sample of WHO resources that can help you if you do not know how to start

Infection Prevention and Control Course Series. In: World Health Organization, Infection Prevention and control [website] (<https://openwho.org/channels/ipc>, accessed 26 April 2021).

Implementation manual to prevent and control the spread of carbapenem-resistant organisms at the national and health care facility level: interim practical manual supporting implementation of the Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, Acinetobacter baumannii and Pseudomonas aeruginosa in health care facilities. Geneva: World Health Organization; 2019 (WHO/UHC/SDS/2019.6; <https://apps.who.int/iris/handle/10665/312226>, accessed 26 April 2021).

Hennessy-Hicks Training Needs Analysis Questionnaire and Manual. Training Assessment Tool. Geneva: World Health Organization; 2011 (https://www.who.int/workforcealliance/knowledge/resources/hennessyhicks_trainingneedsquest/en/, accessed 26 April 2021).



MONITORING AND FEEDBACK TO ASSESS THE PROBLEM, DRIVE APPROPRIATE CHANGE AND DOCUMENT IMPROVEMENT OF PRACTICES – “CHECK IT”.



Read and use the statements below to ensure that a range of improvement actions have been taken.

Your action checks

- **Monitoring tools** have been checked for validity and reliability in line with guidance/SOPs and data collection recommendations, if not already done, and have been made available for use.
- **Staff** has been identified to execute monitoring activities and trained to do this, if not already trained, **always with IPC input.**
- An audit/surveillance **monitoring schedule** has been created and executed, including roles and responsibilities, and made available to ensure that staff engage with this as an improvement approach (different to formal monitoring that is seen as “inspection”), with **IPC input as necessary.**
- **Additional mechanisms** for patient/visitor feedback have been considered, depending on the setting, with **IPC input.**
- Those coordinating monitoring activities (whether IPC or others) have been encouraged to ensure that they have embraced **alert mechanisms**, not just routine planned activities, in order to highlight in real time when systems and processes fail and, for example, when products/equipment are not reliably available or need repair.
- **Audit and surveillance activities, with reporting and feedback, have included at least the following, with IPC input, as necessary:**
 - **reliable, sufficient availability of quality products/equipment** considering end-to-end distribution;
 - cleaning/disinfection, waste and linen management **practices**, including timing and techniques;
 - **consumption/utilization** rate and replenishment of products/solutions to assess rational and safe use. This includes the impact of any changes to procurement plans, e.g. a new cleaning solution, as well as review of the impact on personal use and the built environment, such as from any potentially corrosive solutions;
 - cleanliness of the **environment**;
 - staff **knowledge and perceptions** on appropriate and safe practices, use of products and equipment, and associated hand hygiene and PPE use;
 - **availability and legibility of reminders** (e.g. posters, leaflets), as well as their ability to engage users and frequency of replacement;
 - training **records**;
 - depending on the setting, **patient feedback**;
 - **infection rates**, aimed at stimulating improved practices.

A sample of WHO resources that can help you if you do not know how to start

Implementation manual to prevent and control the spread of carbapenem-resistant organisms at the national and health care facility level: interim practical manual supporting implementation of the Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, Acinetobacter baumannii and Pseudomonas aeruginosa in health care facilities. Geneva: World Health Organization; 2019 (WHO/UHC/SDS/2019.6; <https://apps.who.int/iris/handle/10665/312226>, accessed 26 April 2021).

Water and Sanitation for Health Facility Improvement Tool (WASH FIT). Geneva: World Health Organization; 2017. (<https://apps.who.int/iris/handle/10665/254910>, accessed 26 April 2021).



What success might look like after using the aide-memoires

In summary, if you have taken the actions that have been outlined in the aide-memoires, focused on how to, build it, teach it, check it, sell it and live it, and you have done everything that was needed to ensure that IPC practices are reliably and safely carried out by the staff that needs to perform these in their daily workflow, you can expect to see the following features in your setting.



National and facility guidelines, SOPs and plans, consistent with international guidance



Training needs assessments and up-to-date packages



Dedicated budgets



Monitoring plans including for active feedback



Systems and information for reliably available products for staff, patients and visitors



Communications strategies



Visible, identifiable role models and champions



Completion and ongoing monitoring of WHO's IPCAF and IPCAT2



“As a nurse manager, after our IPC focal point worked with us, we saw many improvements. Here are just a few examples of what success looks like in our setting:



We have **easy to access, reliable product availability, and products are being used reliably by all staff** – masks, tissues, alcohol based handrub, soap and water, aprons/gowns, gloves, the right waste receptacles, clean and dirty linen containers, cleaning products.

We have trainers who are **competent at delivering targeted training** to a range of staff. We have training schedules that are displayed and support the staff's needs and rotas.

We always display and also hear **reminders that support staff to take the right actions**. It is great that these reminders are refreshed often to be sure they are still noticed by staff.

We have trained staff who **monitor IPC practices and behaviours and give us targeted feedback** that helps us improve.

We have scripts for myself and other managers to use to **talk to staff about the importance of IPC measures**. We hold regular team briefings that fit within the daily rota to talk about the importance of IPC”.

Additional associated resources

- Core components for IPC - Implementation tools and resources. In: World Health Organization, Infection prevention and control [website] (<https://www.who.int/infection-prevention/tools/core-components/en/>, accessed 26 April 2021).
- Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/112656>, accessed 26 April 2021).
- Roadmap to improve and ensure good indoor ventilation in the context of COVID-19. Geneva: World Health Organization; 2021. (<https://apps.who.int/iris/handle/10665/339857>, accessed 26 April 2021).
- COVID-19 operationalization of the global response strategy in the WHO European Region. August 2020. Copenhagen: WHO Regional Office for Europe; 2020 (<https://apps.who.int/iris/handle/10665/334167>, accessed 26 April 2021).
- COVID-19 essential supplies forecasting tool overview of the structure, methodology, and assumptions used: interim guidance, 25 August 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333983>, accessed 26 April 2021).
- COVID-19 essential supplies forecasting tool: frequently asked questions (FAQ), 25 August 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/333982>, accessed 26 April 2021).

Annex 1

Multimodal improvement strategies (MMIS) are a core component of effective infection prevention and control (IPC) programmes according to the WHO Guidelines on Core Components of IPC programmes at the National and Acute Health Care Facility Level.

The guideline's recommendation states that IPC activities using MMIS should be implemented to improve practices and reduce HAI and AMR. In practice, this means the use of multiple approaches that in combination will contribute to influencing the behaviour of the target audience (usually health workers) towards the necessary improvements that will impact on patient outcome and contribute to organizational culture change. Implementation of IPC MMIS needs to be linked with the aims and initiatives of quality improvement programmes and accreditation bodies both at the national and facility levels.

Five key elements to focus on when improving IPC

The MMIS consists of several elements (3 or more; usually 5) implemented in an integrated way to guide action and provide a clear focus for the implementer.

Targeting only ONE area (i.e. unimodal), is highly likely to result in failure. All five areas should be considered, and necessary action taken, based on the local context and situation informed by periodic assessments.

WHO identifies five elements for IPC MMIS in a health-care context:

- 1 **the system change** needed to enable IPC practices, including infrastructure, equipment, supplies and other resources;
- 2 **training and education** to improve health worker knowledge;
- 3 **monitoring and feedback** to assess the problem, drive appropriate change and document practice improvement;
- 4 **reminders and communications** to promote the desired actions, at the right time, including campaigns;
- 5 **a culture of safety** to facilitate an organizational climate that values the intervention, with a focus on involvement of senior managers, champions or role models.

In other words, the WHO multimodal improvement strategy addresses these five areas:

BUILD IT (SYSTEM CHANGE)

- What infrastructures, equipment, supplies and other resources (including human) are required to implement the intervention?
- Does the physical environment influence health worker behaviour? How can ergonomics and human factors approaches facilitate adoption of the intervention?
- Are certain types of health workers needed to implement the intervention?
- Practical example: when implementing hand hygiene interventions, ease of access to handrubs at the point of care and the availability of WASH infrastructures (including water and soap) are important considerations. Are these available, affordable and easily accessible in the workplace? If not, action is needed.



LIVE IT (CULTURE CHANGE)

- Is there demonstrable support for the intervention at every level of the health system? For example, do senior managers provide funding for equipment and other resources? Are they willing to be champions and role models for IPC improvement?
- Are teams involved in co-developing or adapting the intervention? Are they empowered and do they feel ownership and the need for accountability?
- Practical example: when implementing hand hygiene interventions, the way that a health facility approaches this as part of safety and quality improvement and the value placed on hand hygiene improvement as part of the clinical workflow are important considerations.



SELL IT (REMINDERS & COMMUNICATION)

- How are you promoting an intervention to ensure that there are cues to action at the point of care and messages are reinforced to health workers and patients?
- Do you have capacity/funding to develop promotional messages and materials?
- Practical example: when implementing interventions to reduce catheter-associated bloodstream infection, the use of visual cues to action, promotional/reinforcing messages, and planning for periodic campaigns are important considerations.



TEACH IT (TRAINING & EDUCATION)

- Who needs to be trained? What type of training should be used to ensure that the intervention will be implemented in line with evidence-based policies and how frequently?
- Does the facility have trainers, training aids, and the necessary equipment?
- Practical example: when implementing injection safety interventions, timely training of those responsible for administering safe injections, including carers and community workers, are important considerations, as well as adequate disposal methods.



CHECK IT (MONITORING & FEEDBACK)

- How can you identify the gaps in IPC practices or other indicators in your setting to allow you to prioritize your intervention?
- How can you be sure that the intervention is being implemented correctly and safely, including at the bedside? For example, are there methods in place to observe or track practices?
- How and when will feedback be given to the target audience and managers? How can patients also be informed?
- Practical example: when implementing surgical site infection interventions, the use of key tools are important considerations, such as surveillance data collection forms and the WHO checklist (adapted to local conditions).



Annex 2

An overview of the tool development process

EVIDENCE REVIEW

- A rapid review was undertaken to consider IPC guidance on standard, droplet/contact and airborne transmission, including in IPC COVID-19 interim publications.

TOPIC CHOICE

- The topic-specific focus for the tools was decided upon and action checks were written based on the WHO MMIS and the theory of improvement science. This resulted in tools focused on respiratory and hand hygiene, personal protective equipment (PPE) and environmental cleaning, waste and linen management.

CONSULTATION AND REVISION

- Questions were formulated for a first consultation, taking account of the theory of change concepts, resource use, values and preferences.
- This first consultation (conducted from 29 June to 13 July 2020) included WHO and other country expert stakeholders with unique expertise. Of the 39 invited participants, 27 (69%) responded to the online consultation conducted through Microsoft Forms®.
- Consultation feedback was considered, and informed significant changes to the tools.
- The second consultation exercise in 24 November 2020 involved WHO headquarters and regional office colleagues, most of whom had joined the first consultation. It comprised an interactive 90-minute virtual discussion, with materials shared in advance of the meeting. It aimed to review certain aspects of the final draft content of the tool for ratification, asking three key questions and iteratively seeking final validation.
- A final follow up exercise was held with WHO experts to verify accuracies in the final draft product.
- A desk exercise was completed. This reviewed the web pages of key organizations, including WHO, by searching for key words in order to identify any outstanding freely available tools to add to the lists contained within each aide-memoire.

FINALIZATION

- The final action checks were based on guidance recommendations, structured using an already validated improvement approach (including MMIS statements within other WHO manuals). They were informed by relevant consultation feedback and received final scrutiny and editing.

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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